

LXXXIX.—*Descriptions and Records of Bees.*—XL.

By T. D. A. COCKERELL, University of Colorado.

*Alcidamea hypocrita* (Cockerell).

*Osmia hypocrita*, Ckll., was described from a single female taken at Boulder, Colorado. The range of the species is very greatly extended by a female taken by Professor C. F. Baker at Claremont, California. In the collection of Pomona College is a male obtained at Durango, Colorado, May 21, 1899 (*Oslar*). The discovery of the male makes it necessary to refer the insect to *Alcidamea*, though it is an aberrant member of that genus.

♂.—Length about  $10\frac{1}{2}$  mm.

Similar to the female in colour and form, except for the usual sexual characters; cheeks, posterior part of thorax at sides, and abdomen above beyond second segment with black hair; face and front with long erect white hair; scape long and curved, not much thickened; flagellum long and slender, faintly brownish beneath except at base, last joint bent and sharply pointed; sixth abdominal segment with a rather short sharp median apical tooth (from which proceeds upwards a delicate keel) and on each side a broader tooth; seventh segment triangular, with a small truncate apical tooth, marked by a notch on each side; venter with short black hair, hind margin of first segment straight, of second produced to a lobe; hair of legs mainly black, but dull white on anterior legs behind, and reddish on inner side of tarsi. The hair of the thorax above is long and creamy white.

Easily known from *A. uvulalis*, Ckll., by the absence of the large projection on venter of abdomen; known from *A. biscutelle*, Ckll., by the colour of the pubescence and the total absence of hair-bands on the abdomen.

*Alcidamea simplex* (Cresson).

Fedor, Texas (*Birkmann*). Pomona College collection.

*Hoplitis sambuci*, Titus.

Claremont, California (*Baker*). New to California.

The female is very like that of *H. mesoalerium*, Ckll., but has black spurs; the head larger, especially in the occipital region, and the vertex and disc of mesothorax more closely punctured.

*Osmia clarescens*, sp. n.

♀.—Length about 9 mm.

Steel-blue, with white hair, mixed with long black hairs on face, vertex, and dorsum of thorax; hair of pleura and sides of metathorax entirely white. Legs very blue, inner side of tarsi with dark chocolate hair. Mandibles tridentate, but the inner tooth is broad and truncate and sometimes looks like two; clypeus normal; tegulae largely blue. Wings strongly dusky; b. n. meeting t.-m.; apical part of abdomen above with a good deal of black hair; ventral scopa black, but glittering white hair at sides of abdomen.

♂.—Length about  $7\frac{1}{2}$  mm.

Similar to the female, except in the usual sexual characters; bright steel-blue, legs very blue; pubescence white, but mixed with long black hairs on face, vertex, and dorsum of thorax; hair of clypeus silky white, but on each side are some long black hairs; flagellum black; middle tarsi simple; hind basitarsi toothed. Apical part of abdomen with some black hairs among the light; sixth segment feebly notched, seventh bidentate; first ventral shallowly emarginate, third ventral with long white hair in the emargination, conspicuous when not hidden by the overlapping second segment.

*Hab.* Claremont, California (*Baker*); 28 ♀, 3 ♂. The type is a female.

The female greatly resembles that of *O. coloradella*, Ckll., but is easily separated by the black hair of head and thorax above. It may also be compared with *O. phaceliae*, Ckll., from which it is known by the larger size and blue legs, and with *O. melanotricha*, Lov. & Ckll., from which it is known by the blue legs and black hair of thorax above. The male is extremely like *O. vallicola*, Ckll., but differs at once in the mandibles, which are rather strongly curved near the end, with a short apical tooth (little curved and with a long apical tooth in *vallicola*), and the long black hairs at sides of clypeus are wholly wanting in *vallicola*. It also closely resembles *O. wheeleri*, Ckll., but differs by the black hairs at sides of clypeus and the conspicuous short white hair on inner side of hind tibiae.

*Osmia basilissa*, sp. n.

♀.—Length 9 mm. or slightly more.

Robust; magnificent deep purple, including the legs, with coarse entirely black pubescence; mandibles with two large outer teeth and a binodular short and broad inner one;

clypeus normal, lower margin black. Antennæ black; tegulæ purple. Wings strongly dusky; b. n. going just basad of t.-m.; hind spurs curved at end.

*Hab.* Claremont, California (*Baker*); 1 ♀.

Looks like *O. cobaltina*, Cresson, but is broader and shorter, with the dorsal hair of thorax all black. Compared with *O. sanctæ-rosæ*, Ckll., it is much broader, more thick-set, and the rich purple colour is quite different from the deep blue of *sanctæ-rosæ*.

*Osmia platyura*, sp. n.

♂.—Length about 10 mm.

Narrow, with parallel-sided abdomen; head, thorax, and legs brilliant emerald-green, or the mesothorax suffused with blue; abdomen brilliant green or (var. *a*) brilliant blue-purple, more or less suffused with green; pubescence white throughout, except on inner side of tarsi, where it is yellowish. Head round seen from in front, eyes very large, face narrow; mandibles broadly green at base; scape largely green; flagellum long, ferruginous beneath; mesothorax and scutellum densely punctured; tegulæ shining green. Wings dusky brown; b. n. meeting t.-m.; first r. n. joining second s.m. near base; marginal cell long. Tarsi normal; spurs dark. Abdomen closely punctured, with very little hair above, but the segments beneath conspicuously fringed with white hair; sixth dorsal segment simple in middle, but toothed at each extreme side; seventh very large and flat, forming a broadly rounded apical plate; second ventral more or less keeled, the keel prominent at apex, where it ends in a point; third ventral broadly truncate, the truncate edge more or less concave.

♀.—Length 8–9 mm.

Like the male, but shorter; the green form bluer green, the purple (which may include head and thorax) apparently as common as the green; head oblong, the face much longer than broad, occipital region strongly developed; mandibles greenish at base, with two strong teeth, and a broad, feebly developed, binodulose inner one; scape green, flagellum dark, obscure reddish beneath; pubescence scanty, fuscous; ventral scopa black; tegulæ about two-thirds green; hair on inner side of tarsi dark chocolate.

*Hab.* Type (♂) from mountains near Claremont, California (*Baker*). Other males from Claremont, California (*Baker*), and Ormsby County, Nevada (*Baker*). Seven females from Ormsby County, Nevada (*Baker*).

Related to *O. fulgida*, Cresson, which has a larger female, and in the male has the broad seventh segment evidently pointed. Also closely related to *O. viridimicans*, Ckll., which is much larger; they agree in having the lower part of metathoracic area smooth and shining. In female *viridimicans* the pubescence is entirely black, in *platyura* it is various shades of fuscous, sometimes rather pale. These insects are intermediate between *Osmia* and *Monumetha*.

*Osmia regulina*, sp. n.

♀.—Length about 8 mm.

Robust, with subglobose abdomen; brilliant green, suffused with blue and purple; head large, face broad, with fine white downy pubescence and longer slightly brownish hairs; hair of head and thorax white, the long dorsal hairs somewhat fuscous or yellowish; clypeus and adjacent sides of face purple, the lower margin of clypeus black; scape black, flagellum dark reddish beneath; mesothorax densely confluent punctured; tegulæ punctured, green, with a dull fuscous spot; area of metathorax granular. Wings very dusky, b. n. meeting t.-m.; first r. n. joining second s. m. far from base, marginal cell comparatively short. Legs black, with the femora largely green and the tibiæ purplish; hair on inner side of hind tarsi black. Abdomen dorsally with scanty pale hair, rather greyish on basal part of segments; apical segment fringed with dark greyish hair; ventral scopa black.

♂.—About 7 mm. long.

Blue-green, some greener, others bluer; hair of face long, entirely white; flagellum variably reddish beneath; tegulæ and legs green; sixth abdominal segment with a small notch, seventh bidentate; first ventral truncate, entire.

*Hab.* Type (♀) from Claremont, California (*Baker*). Males from Claremont and the adjacent mountains (*Baker*).

Very close indeed to *O. kincaidii*, Ckll., but distinguished in the female by the paler pubescence, the confluent punctured mesothorax, and the less metallic legs. The male is bluer, with the hair above hardly ochreous. The male is also close to *O. ednæ*, Ckll., but the latter is rather larger, of a brighter yellow green. In the greenest males of *O. regulina* the hind margins of the segments are blue-green and the surface-sculpture of the segments is quite coarse.

*Osmia ednæ*, Cockerell.

Males from Claremont and the adjacent mountains and a female from Claremont (*Baker*) can only be referred here.

The female, not before known, is very like that of *O. regulina*, but the abdomen is narrower, with conspicuous black hair dorsally, there are long black hairs on the head and thorax above, and the clypeus has a good deal of coarse black hair. The mesothorax is very strongly punctured, and the abdomen is very blue. This female is very like the smaller specimens of *O. cobaltina* (variety with green head and thorax), but has thin white hair right across the lower part of face, best seen from above. It is possible that I am in error in ascribing this female to *O. ednæ*, but I have no other plausible mate for it.

A bright green male from the mountains near Claremont (*Baker*), having the hind margins of the abdominal segments bluish, and the hair of the head and thorax above white, is placed as a variety of *O. regulina*, but it seems intermediate between that species and *O. ednæ*. Can it be a hybrid?

*Osmia cobaltina*, Cresson.

This was based on females from Nevada and California, having the hair of the head all black. Six females from Ormsby County, Nevada (*Baker*), vary much in colour and size (one is only 7 mm. long), and several show a little pale hair at sides of face. Cresson did not describe the male of *cobaltina*, but Robertson holds that his *O. illinoensis* is its male. Since *O. cobaltina* is a species characteristic of the Pacific coast region, and is replaced in the Rocky Mountains by the closely allied and probably intergrading *O. bruneri*, Ckll., it seems very improbable that the Illinois *O. illinoensis* can be its male. The male of *O. bruneri* is known to me, and has much coarse black hair on the clypeus &c., whereas *O. illinoensis* has the hair of the clypeus all white.

*Osmia kincaidii*, Cockerell.

Three males from mountains near Claremont, California (*Baker and Crawford*), one female from Claremont (*Baker*). These belong to the smaller race mentioned in the original description. The femora and tibiæ of the female are bright green.

*Osmia bennettæ*, Cockerell.

Males from Claremont and adjacent mountains (*Baker*).

*Osmia granulosa*, sp. n.

♀.—Length 7-7½ mm.

Brilliant deep purple, varying to blue-green; ventral

scopa entirely pale yellow or (var. *a*) dark fuscous, shining yellowish in certain lights; head broad; hair of head and thorax white, nowhere mixed with black or fuscous, but that on vertex distinctly brownish, that on face slightly brownish, and that on lower edge of clypeus shining pale golden; antennæ black; tegulæ purple, punctured near margin; femora, tibiæ, and hind basitarsus in part purple or green. Wings very dusky; first r. n. joining second s.m. far from base; abdomen short and broad, densely punctured.

♂.—Length about 6 mm.

Brilliant peacock-green; pubescence all white; flagellum very obscure brownish beneath; sixth abdominal segment feebly notched, seventh bidentate; first ventral entire; hind basitarsus with a small tooth about 270  $\mu$  from end.

*Hab.* Type female from mountains near Claremont, California (*Baker*); others (♂ ♀) from same locality, and female var. *a* from Claremont (*Baker*).

Compared with the female ascribed to *O. ednæ*, the present species differs at once by its minutely granular (finely punctured) abdomen, which is accordingly duller, though very brilliantly coloured. The male is a bluer green than that of *O. kincaidii*, being covered like the *kincaidii* female. The abdomen of the male is brilliantly shining.

#### *Chelynia subcærulea* (Cresson).

Cresson described this from a single male collected in California. In his catalogue published in 1887 he recorded it, possibly by mistake, as from Colorado and Nevada. A female from Ormsby County, Nevada (*Baker*), is quite as this sex of *subcærulea* might be expected to be, except for its small size, length about 6½ mm. The size of bees of this group is very variable, and no doubt this Nevada female is merely an unusually small specimen. The pubescence of the head and thorax is mixed black and pale, the black or dark fuscous preponderating. The ivory-coloured abdominal bands are reduced to a pair of widely separated short stripes on the second and third segments, and larger markings, clavate laterad, on the first; the fourth segment is without light markings. The strong punctures on the disc of mesothorax are more widely separated than in *C. elegans*. Cresson states that *C. subcærulea* is larger than *C. elegans*, but I believe both vary in size, with probably little or no difference. *C. elegans* has the thorax more densely punctured, and is perhaps confined to the Rocky Mountains, although Cresson in 1878 incidentally refers to its occurrence in California.

*Chelynia calliphorina*, sp. n.

♀.—Length about  $8\frac{1}{2}$  mm.

Deep rich indigo-blue, with slight green tints on the abdomen; hair of face mainly dull white, but many black hairs intermixed; flagellum obscurely brownish beneath; hair of vertex and thorax above more black than pale, of pleura black, mixed with pale above, of sides of metathorax black, with a white tuft above; head and thorax very coarsely punctured, the punctures well separated on disc of mesothorax; tegulae blue, punctured. Wings very dusky; second s.m. very long, its basal corner much more produced than in *C. pavonina*. Legs dark blue, with dark hair; abdomen strongly but not densely punctured, its pubescence black; no abdominal bands or spots; ventral segments with a fine chocolate-coloured tomentum.

*Hab.* Mountains near Claremont, California (*Baker*).

Related to *C. pavonina*, Ckll., and *C. cusacke*, Ckll., especially the latter, but easily known by the pale hair of the face. Some time ago Professor Pérez sent me a photograph of a Californian bee in his collection, which appears to be a *Chelynia*, and is probably *C. calliphorina*.

*Stelis carnifex*, sp. n.

♀.—Length about  $8\frac{1}{2}$  mm.

Deep rich purple, the vertex, mesothorax (except hind edge), and scutellum black or (Nevada specimen) dark blue; punctures strong, well separated on mesothorax; head oblong; scape purplish or bluish, flagellum obscure brownish beneath; tegulae purple in front, and with a more or less pallid discal spot. Wings dusky (brownish), nervures dark; pubescence black. Legs dark purple. Abdomen with the first three segments strongly but not densely punctured, the others with large very dense more or less elongate punctures; ventral segments fringed with dark fuscous or black hair.

*Hab.* Type from mountains near Claremont, California (*Baker*). Also one from Ormsby County, Nevada (*Baker*).

Intermediate in size between *S. montana*, Cr., and *S. seneciophila*, Ckll., in colour different from either. The face is narrower than in the Rocky Mountain species.

*Prosopis xanthaspis*, var. *bicuneata* (Cockerell).

A female of *P. xanthaspis*, Ckll., from Mackay, Queensland, March 1900 (*Turner*), has a yellow patch on each side of the clypeus, thus approaching the condition of *P. bicuneata*. On reviewing the matter, I now believe that *bicuneata* is a variety of *P. xanthaspis*. A specimen of var.

*bicuneata* was collected at flowers of *Cassia*, Dec. 1899 (Turner, 13 a).

*Crocisa subramosa*, sp. n.

*Crocisa* sp. between *takaonis* and *ramosa*, Ckll. Ann. & Mag. Nat. Hist., April 1911, p. 311.

♀.—Length about 10 mm.

Stature and appearance of *C. ramosa* from France, but abdominal bands broader, the marks at sides of apical part of first segment pointed mesad, the hind edge diverging from the hind margin at an angle of  $45^\circ$ ; lateral marks on second segment more curved upwards; tegulæ black. Wings very dark; marginal cell longer than in *C. ramosa*; other characters given at the place cited.

*Hab.* Foochow, China (*H. R. Caldwell*). U.S. National Museum.

*Crocisa surda*, sp. n.

*Crocisa* sp. near *kanshireana*. Ckll. Ann. & Mag. Nat. Hist., April 1911, p. 313.

♀.—Length 13–14 mm.

Characters as given in the place cited, but it is to be noted that the type has the inner edges of the hind margin of scutellum slightly flexuous, the character being evidently a variable one. Hair of abdomen very dull pale blue, with the basal band of first segment rather widely interrupted (though the interruption is less than half the distance between the posterior points of scutellum), but the apical band slightly interrupted; the pleura is light-haired, with a dark patch above, and a very large one lower down, entering the anterior margin; the wings are very dark with the usual pale spots.

*Hab.* Foochow, China (*H. R. Caldwell*). U.S. National Museum.

XC.—*A Vote against the Strict Application of the Priority Rule in Zoological Nomenclature.* (With an Introduction by Dr. TH. MORTENSEN.)

IN the 'Zoologischer Anzeiger,' Bd. xxxvi. no. 24, Nov. 22, 1910, and in the 'Annals' for December 1910, is published a note from the International Commission on Zoological Nomenclature inviting all zoologists to send to the Secretary of the Commission a list of 100 zoological names which they